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HONEYWELL INFORMATION SYSTEMS INC.
COMPUTER OPERATIONS - PHOENIX

Cont. on Sh. 2

Sh. No. 1

ENGINEERING PRODUCT SPECIFICATION, PART 1
655 IOM PERIPHERAL SUBSYSTEM INTERFACE ADAPTER

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3.2.3.2 Data Transfer Termination

A data transfer activity, either read or write, may be terminated by either the MPC or the PSIA. The MPC signals a termination by a Terminate In (TMI) signal accompanying the last valid byte (if a read), or in response to a byte from the PSIA (if a write). The PSIA terminates a data transfer by the Terminate Out (TMO) signal accompanying the last byte (if a write), or in response to a byte from the MPC (if a read). Refer to Section 3.3 for termination under error conditions.

3.2.3.2.1 Read Termination

If the MPC terminates a read operation, it will send a TMI signal with the last byte. In response to this, the PSIA shall store in memory all data in its buffers including the byte accompanying the TMI.

As the data is put away in memory, the PSIA shall maintain the correct terminate character position and odd/even count. This information shall be saved for a status store, which must be the next service code. This data need be saved only for the active logical channel.

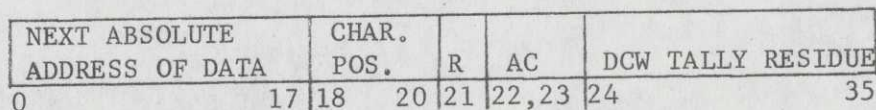
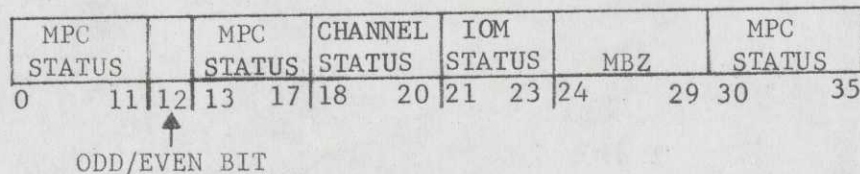
The PSIA shall do no list service for the logical channel after the final bytes have been stored in memory.

3.2.3.2.2 Write Termination

The write operation is terminated in a similar manner to the read operation, either by the MPC's TMI or the PSIA's TMO. The TMO shall accompany the last byte.

3.2.4 "Store Terminate Status" Service Code

In response to this service code, the PSIA shall prepare to store termination status for the logical channel. The data for the status is obtained from three places, the IOM central (DCW residue), the PSIA, and the MPC. The status shall have the format shown below.



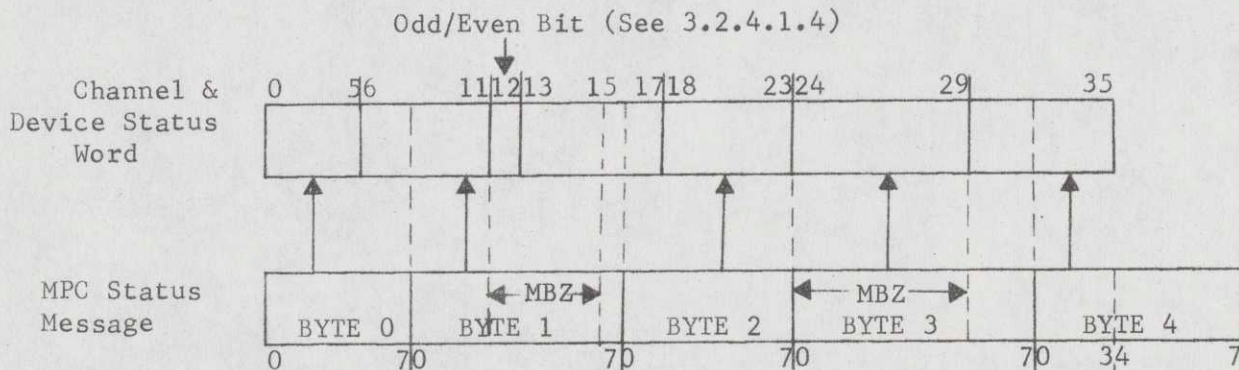
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3.2.4.1 Even Word3.2.4.1.1 MPC Status

The even word is obtained from a five byte message sent by the MPC after the "store terminate status" service code sequence. The five status bytes are mapped into the channel and device status word as shown below.



If less than five bytes are received from the MPC, the bytes are to be stored left justified, with 0's supplied for the missing MPC data. If more than 5 bytes are received, the first 5 bytes shall be the ones stored. The PSIA shall stop the status transfer with TMO.

3.2.4.1.2 IOM Status Field (Bits 21-23)

The IOM status portion of the even word is the fault status supplied by the IOM at the end of a data or list service. It is non-zero only if an IOM detected error has occurred. Refer to Section 3.3. This field is supplied by the MPC.

3.2.4.1.3 Channel Status (Two Fields, Bits 18-20 and 24-29)

The channel status portion of the even word is supplied by the MPC during the status service. Bits 18-20 are channel fault status bits. They are discussed in Section 3.3. Bits 24-29 are set aside for future growth and must be zero.

3.2.4.1.4 Odd/Even Bit (Bit 12)

Bit 12, the odd/even bit, indicates the total number of words (or partial words) stored in core on a read operation. If the total number of words were odd, bit 12 shall be a 1. If even, it shall be a 0. The PSIA shall OR the odd/even bit in bit 12 of this word. The balance of the word is unchanged from the value received from the MPC.

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PSIA ERROR SUMMARYIOM DETECTED USER FAULTSLPW tally run out
2 TDCW's in a row
Boundary Error
IDCW in restricted mode
Char pos/size discrepancy
Parity Error, PSIA to IOMACTIONTerminate Now
Terminate Now
Terminate Now
Terminate Now
Terminate Now
Terminate later if
data service
Terminate now if not
data serviceCODE SENT TO MPC
0 1 2 3 4 5 6 7 MEANING

1	0	0	0	0	0	0	1	Terminate
1	0	0	0	0	0	1	0	↑
1	0	0	0	0	0	1	1	
1	0	0	0	0	1	0	1	
1	0	0	0	0	1	1	0	
1	0	0	0	0	1	1	1	Terminate

PSIA DETECTED FAULTSConnect while busy
(unexpected PCW)
Data parity error, PSI
Parity error, IOM to PSIATerminate when LC is
active.
Terminate later
Terminate later if
data service
Terminate now if not
data service.Illegal Service Code
Parity error during service
code sequence
Illegal DCWTerminate now
Terminate now
Terminate now.

1	0	0	0	1	0	0	0	Terminate
1	0	1	1	0	0	0	0	↑
1	0	1	1	1	0	0	0	
0	1	0	0	0	0	0	0	
0	1	0	0	0	0	0	0	
1	0	0	1	1	0	0	0	Terminate

OTHER EVENTS (LC is masked for these conditions)IOM System Fault
Masking PCWTerminate now
Terminate when LC#
is active.

1	1	0	0	0	0	0	0	Abort
1	1	0	0	0	0	0	0	↑

Service code for not busy
or masked logical channel.

Terminate now

1	1	0	0	0	0	0	0	Abort
---	---	---	---	---	---	---	---	-------

FIGURE 3.3.2B

3.3.2 (Continued)

The "terminate when LC# is active" action means that the MPC is forced to terminate the activity on the logical channel when that logical channel becomes the active logical channel. The error is remembered until that time. For example, a PCW received for a busy logical channel other than the one currently active on the interface, does not interfere with the currently active logical channel. Rather, the error is acted upon only when the MPC sends a service code for that logical channel.

The codes sent to the MPC indicating an error have been chosen such that bits 5, 6, and 7 correspond to the IOM fault portion of the peripheral status word, and bits 2, 3, and 4 correspond to the channel fault portion of that word. The 0 and 1 bits, when containing the code 10 indicate to the MPC that a status and terminate cycle should follow. A 01 code means that the logical channel has been masked, and that no status and terminate cycle should follow (an abort condition).

A special error case occurs where the PSIA receives a PCW during the MPC Status and Terminate cycle. For this condition the PSIA will request a second Status and Terminate cycle to store this error condition.

3.4 MPC Reset

The PSIA shall exercise its reset control over the MPC, via the "Reset Out" line (RSO) and the "Operational Out" line (OPO).

The RSO line shall be true for $20 \mu s \pm 10 \mu s$.

3.4.1 System Initialization

MPC's may occur in two configurations: (1) MPC's in a single system and (2) MPC's shared by more than one system. (1) In shared MPC systems, initialization will be accomplished thru SCAM and therefore the PSIA is required to have a patch which will disable RSO (for systems initialization only) for this configuration. OPO in this configuration will be used by the MPC to reset only LC's associated with the system being initialized. (2) In non-shared systems, initialization will be accomplished with the RSO line. It should be noted that RSO must be true for the required time after OPO returns to the true state.

3.4.2 Reset PCW

The PSIA will send RSO to the MPC when a PCW commanding reset has been received.